REMARKS

Applicants' counsel thanks Examiner Vo for her continued very careful and thorough examination of the present application.

Herein, claims 2-3, 7-9, 25-26 and 30-31 have been canceled without prejudice. Claims 20 and 22 have been amended as further described below. Claim 1 has been amended to specify the vent holes are provided in the skin at a location where the skin overlies the foam substrate. All remaining claims are unchanged. No new matter has been entered. Basis for the amendment to claim 1 can be found, e.g., in the drawings as-filed.

Claims 2-3, 7-9, 22, 25-26 and 30-31 have all been rejected under 35 § 112, first paragraph, for lacking written description support in the specification. Applicant respectfully disagrees these claims are not supported in the specification. However, solely to expedite allowance of the case, applicant has canceled claims 2-3, 7-9, 25-26 and 30-31 without prejudice. Claim 22 has been amended to remove the limitation that drew the Examiner's rejection. Claim 20 has also been amended similarly as claim 22, even though it was not included in the Examiner's rejection. Accordingly, all the Section 112 rejections are now overcome.

Claims 7-9, 17, 22, 25-26 and 30-31 have been objected-to as being of improper dependent form. Specifically, the Examiner argues these claims do not further limit the subject matter of their respective antecedent claims. Of these, claims 7-9, 25-26 and 30-31 have been canceled without prejudice, thus obviating the objection. With regard to claims 17 and 22, the objection is respectfully traversed. Claim 17 depends from claim 1 and further limits the foam substrate to being a partially closed-cell foam. This limitation is neither recited nor inherent in claim 1, and therefore claim 17 is a proper dependent claim. Claim 22 depends from claim 1 and describes physical properties of the protective layer in that claim that are neither recited nor inherent in claim 1. Claim 22 specifies specific energy absorptive behavior under recited impact conditions. The ability of the substrate to perform as described in claim 22 depends on a number of factors not fixed in claim 1. Accordingly, claim 22 also is a proper dependent claim.

The claims (including claim 1) have been rejected under 35 USC § 103(a) based on six different reference combinations, all of which use either Donzis or Krent as the

base reference. Specifically, Donzis or Krent is relied on to teach the basic structure of the claims except for a viscoelastic foam. The remaining three references, Bastin, Hager and Moore, are relied on to teach the existence of viscoelastic foams. Then the Examiner argues, for all six reference combinations, that it would have been obvious to combine the base reference (Donzis or Krent) with the secondary reference (Bastin, Hager or Moore). The Examiner's reasoning is that one would have used the viscoelastic foam taught in the latter references in place of the elastic foam in the former references, "motivated by the desire to provide better impact absorption because the viscoelastic foam exhibits slow recovery after compression."

Respectfully, the alleged motivation to combine the references is not correct. Whether a foam provides good impact-energy absorption depends on the foam's characteristics and behavior *during compression*, not after the compression event is over. How the foam behaves after the compression force is removed, e.g. that it exhibits *slow recovery after compression*, may be useful to determine whether the foam could be reused. But it is irrelevant to the foam's ability to initially absorb impact force. In summary, the fact that viscoelastic foams "exhibit[] slow recovery after compression" does not mean they will provide better impact absorption as the Examiner has suggested.

Clearly, there is no motivation in either of the base references to employ a viscoelastic foam in the disclosed structures. The Examiner's unsupported statement of alleged motivation is not only incorrect as explained above, but it demonstrates the hindsight basis of reasoning behind the rejections. Before the applicants' invention, there would have been no reason to incorporate a viscoelastic foam into the equipment of either Donzis or Krent.

With respect to Donzis, applicants submit that, in fact, one would have *avoided* using a viscoelastic foam due to its slow-recovery characteristics. In Donzis, it is the presence of air in the cavity 70 provides energy absorption, not the foam. The foam merely is present to re-expand the air cavity 70 after the compression force is removed. See, e.g., the very first sentence of the Abstract: "A structure is provided which absorbs shock *by the controlled transfer of air from within an enclosure* to outside the enclosure. A core of open-celled foam material is provided *to act as an exhaustable reservoir of air*

within the enclosure." Thus, the foam is merely a reservoir of air; it is not relied upon substantially for its own energy-absorption capability. In such equipment, where the foam itself does not provide substantial protection, one would want the air cavities to be re-inflated as quickly as possible following compression. Otherwise, they may not be ready by the time an other impact occurs. Therefore, it is submitted a person of ordinary skill in the art actually would be motivated ***not*** to use a viscoelastic foam in Donzis. To suggest using a viscoelastic foam in that reference contradicts the express teachings of Donzis. It would further damage the functionality of Donzis's structure because it would prevent quick re-inflation of the air cavities in a structure where air is primarily relied on to provide impact protection.

As for Krent, respectfully, this reference does not teach the basic structure of claim 1. Claim 1 requires the "vent holes providing fluid communication between the ambient environment and a portion of the surface of said foam substrate that is located proximate said vent holes." The underlined portion of this claim simply is not found in Krent.

Krent discloses an array of foam elements enclosed and sandwiched between upper and lower layers 12 and 17. See Figs. 1 and 8 (latter figure cited by Examiner), and col. 4, lns. 43-45. Together, the upper and lower layers 12,17 form a membrane that holds each foam "module," including its array of discrete foam elements, together. Krent further describes the vent holes 24, cited by the Examiner, as follows:

> [The] modules 14...are traversed by a plurality of air passages 24 which provide gaseous communication between an upper surface adjacent layer[] 12, and a lower surface adjacent layer[] 17. Air passages 24 permit the escape of moisture, heat, salt, gases and the like from the skin's surface to the external environment. Air passages 24 may be die cut into the foam material 11 prior to assembly, or after assembly.

Hence, these air passages are not provided in a skin of the foam to provide fluid communication between the ambient environment and the surface of any underlying foam. This is because the foam does not underly any "skin" (*cf.* the membrane in Krent) where the passages 24 are located. Instead, the passages 24 are provided *in between*

adjacent foam elements, and are provided completely through that membrane to provide ventilation of the underlying human skin to the outside atmosphere.

Succinctly, there are no vent holes (passages 24) in any portion of the membrane (layers 12 and 17) in Krent that might be considered a skin of an underlying foam element. This is because where the passages are located, the membrane is not a skin of the foam, i.e. it does not overly the foam, but instead it is in between adjacent foam elements. The air passages 24 pass through this portion of the membrane, in between foam elements, to provide ventilation to a person's skin underneath the module 14; the vent holes are not provided in a "skin" overlying any foam element. *Clearly*, the vent holes 24 do not, and cannot, regulate the rigidity of a protective layer adjacent a protective zone of the module 14 in Krent, in order to make the layer more rigid adjacent that protective zone than adjacent a second protective zone by virtue of the relative size and/or density of vent holes, as recited, e.g., in dependent claim 11. The vent holes are solely and exclusively a ventilation mechanism for the person wearing the module 14. They are not provided or arranged to regulate the rigidity of the foam elements, or of the module 14 generally.

To expedite the prosecution of this case, applicant has amended claim 1 to specify the vent holes are located in the skin at a location where the skin "overlies" the foam substrate. This unquestionably distinguishes Krent for reasons discussed above.

In summary, there is absolutely no motivation to use a viscoelastic foam in the athletic protective equipment of either Donzis or Krent. The motivation cited by the Examiner is incorrect because the post-impact, recovery behavior of a foam does not directly relate to how it will behave *during impact*. So one of ordinary skill in the art would not judge a foam that exhibits slow-return recovery to be necessarily a better impact absorber. Also, one of ordinary skill actually would avoid using a viscoelastic foam in Donzis, in order that the air cavities therein would re-inflate as soon as possible after impact. Finally, regarding Krent, that reference does not disclose the basic structure of claim 1, even without the viscoelastic foam. For at least these reasons, all six bases of rejection, all of which rely on either Donzis or Krent as a base reference, are now submitted as being overcome. Accordingly, the application is now believed to be in condition for allowance.

Should the Examiner have any questions or reservations with respect to the arguments contained in the present submission, she is invited to please contact the undersigned attorney at the phone number provided below.

If any additional fees are required by this communication, which are not mentioned above, please charge the same to our Deposit Account No. 16-0820, Order No. 34563US1.

Respectfully submitted,

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